

SEQUENCE LISTING

<110> Bukh, Jens
Purcell, Robert
Yanagi, Masayuki
Emerson, Suzanne

<120> Infectious cDNA Clone of GB virus B and Uses Thereof

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<140> TBA

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<150> 60/137,694

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Trp Leu Ile His Ile Asp Leu Asn Glu Thr Gly Thr Cys Tyr Leu Glu
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Tyr Thr Trp Gly Glu Asn Glu Thr Asp Val Phe Leu Leu Asn Ser Thr		
	530	535 540
Arg Pro Pro Leu Gly Ser Trp Phe Gly Cys Thr Trp Met Asn Ser Ser		
545	550	555 560
Gly Tyr Thr Lys Thr Cys Gly Ala Pro Pro Cys Arg Thr Arg Ala Asp		
	565	570 575
Phe Asn Ala Ser Thr Asp Leu Leu Cys Pro Thr Asp Cys Phe Arg Lys		
	580	585 590
His Pro Asp Thr Thr Tyr Leu Lys Cys Gly Ser Gly Pro Trp Leu Thr		
	595	600 605
Pro Arg Cys Leu Ile Asp Tyr Pro Tyr Arg Leu Trp His Tyr Pro Cys		
	610	615 620
Thr Val Asn Tyr Thr Ile Phe Lys Ile Arg Met Tyr Val Gly Gly Val		
625	630	635 640
Glu His Arg Leu Thr Ala Ala Cys Asn Phe Thr Arg Gly Asp Arg Cys		
	645	650 655
Asn Leu Glu Asp Arg Asp Arg Ser Gln Leu Ser Pro Leu Leu His Ser		
	660	665 670
Thr Thr Glu Trp Ala Ile Leu Pro Cys Ser Tyr Ser Asp Leu Pro Ala		
	675	680 685
Leu Ser Thr Gly Leu Leu His Leu His Gln Asn Ile Val Asp Val Gln		

690	695	700
Phe Met Tyr Gly Leu Ser Pro Ala Leu Thr Lys Tyr Ile Val Arg Trp		
705	710	715 720
Glu Trp Val Ile Leu Leu Phe Leu Leu Leu Ala Asp Ala Arg Val Cys		
	725	730 735
Ala Cys Leu Trp Met Leu Ile Leu Leu Gly Gln Ala Glu Ala Ala Leu		
	740	745 750
Glu Lys Leu Val Ile Leu His Ala Ala Ser Ala Ala Ser Cys Asn Gly		
	755	760 765
Phe Leu Tyr Phe Val Ile Phe Phe Val Ala Ala Trp Tyr Ile Lys Gly		
	770	775 780
Arg Val Val Pro Leu Ala Thr Tyr Ser Leu Thr Gly Leu Trp Ser Phe		
	785	790 795 800
Ser Leu Leu Leu Leu Ala Leu Pro Gln Gln Ala Tyr Ala Tyr Asp Ala		
	805	810 815
Ser Val His Gly Gln Ile Gly Ala Ala Leu Leu Val Met Ile Thr Leu		
	820	825 830
Phe Thr Leu Thr Pro Gly Tyr Lys Thr Leu Leu Ser Arg Phe Leu Trp		
	835	840 845
Trp Leu Cys Tyr Leu Leu Thr Leu Gly Glu Ala Met Val Gln Glu Trp		
	850	855 860
Ala Pro Pro Met Gln Val Arg Gly Gly Arg Asp Gly Ile Ile Trp Ala		
	865	870 875 880
Val Ala Ile Phe Tyr Pro Gly Val Val Phe Asp Ile Thr Lys Trp Leu		
	885	890 895
Leu Ala Val Leu Gly Pro Ala Tyr Leu Leu Lys Gly Ala Leu Thr Arg		
	900	905 910
Val Pro Tyr Phe Val Arg Ala His Ala Leu Leu Arg Met Cys Thr Met		
	915	920 925
Ala Arg His Leu Ala Gly Gly Arg Tyr Val Gln Met Ala Leu Leu Ala		
	930	935 940
Leu Gly Arg Trp Thr Gly Thr Tyr Ile Tyr Asp His Leu Thr Pro Met		

945	950	955	960
Ser Asp Trp Ala Ala Ser Gly Leu Arg Asp Leu Ala Val Ala Val Glu			
	965	970	975
Pro Ile Ile Phe Ser Pro Met Glu Lys Lys Val Ile Val Trp Gly Ala			
	980	985	990
Glu Thr Ala Ala Cys Gly Asp Ile Leu His Gly Leu Pro Val Ser Ala			
	995	1000	1005
Arg Leu Gly Arg Glu Val Leu Leu Gly Pro Ala Asp Gly Tyr Thr Ser			
	1010	1015	1020
Lys Gly Trp Ser Leu Leu Ala Pro Ile Thr Ala Tyr Ala Gln Gln Thr			
	1025	1030	1035
			1040
Arg Gly Leu Leu Gly Thr Ile Val Val Ser Met Thr Gly Arg Asp Lys			
	1045	1050	1055
Thr Glu Gln Ala Gly Glu Ile Gln Val Leu Ser Thr Val Thr Gln Ser			
	1060	1065	1070
Phe Leu Gly Thr Ser Ile Ser Gly Val Leu Trp Thr Val Tyr His Gly			
	1075	1080	1085
Ala Gly Asn Lys Thr Leu Ala Gly Ser Arg Gly Pro Val Thr Gln Met			
	1090	1095	1100
Tyr Ser Ser Ala Glu Gly Asp Leu Val Gly Trp Pro Ser Pro Pro Gly			
	1105	1110	1115
			1120
Thr Lys Ser Leu Glu Pro Cys Thr Cys Gly Ala Val Asp Leu Tyr Leu			
	1125	1130	1135
Val Thr Arg Asn Ala Asp Val Ile Pro Ala Arg Arg Arg Gly Asp Lys			
	1140	1145	1150
Arg Gly Ala Leu Leu Ser Pro Arg Pro Leu Ser Thr Leu Lys Gly Ser			
	1155	1160	1165
Ser Gly Gly Pro Val Leu Cys Pro Arg Gly His Ala Val Gly Val Phe			
	1170	1175	1180
Arg Ala Ala Val Cys Ser Arg Gly Val Ala Lys Ser Ile Asp Phe Ile			
	1185	1190	1195
			1200
Pro Val Glu Thr Leu Asp Ile Val Thr Arg Ser Pro Thr Phe Ser Asp			

1205	1210	1215
Asn Ser Thr Pro Pro Ala Val	Pro Gln Thr Tyr Gln Val Gly Tyr Leu	
1220	1225	1230
His Ala Pro Thr Gly Ser Gly Lys Ser Thr Lys Val Pro Val Ala Tyr		
1235	1240	1245
Ala Ala Gln Gly Tyr Lys Val Leu Val Leu Asn Pro Ser Val Ala Ala		
1250	1255	1260
Thr Leu Gly Phe Gly Ala Tyr Leu Ser Lys Ala His Gly Ile Asn Pro		
1265	1270	1275 1280
Asn Ile Arg Thr Gly Val Arg Thr Val Thr Thr Gly Ala Pro Ile Thr		
1285	1290	1295
Tyr Ser Thr Tyr Gly Lys Phe Leu Ala Asp Gly Gly Cys Ala Gly Gly		
1300	1305	1310
Ala Tyr Asp Ile Ile Ile Cys Asp Glu Cys His Ala Val Asp Ser Thr		
1315	1320	1325
Thr Ile Leu Gly Ile Gly Thr Val Leu Asp Gln Ala Glu Thr Ala Gly		
1330	1335	1340
Val Arg Leu Thr Val Leu Ala Thr Ala Thr Pro Pro Gly Ser Val Thr		
1345	1350	1355 1360
Thr Pro His Pro Asn Ile Glu Glu Val Ala Leu Gly Gln Glu Gly Glu		
1365	1370	1375
Ile Pro Phe Tyr Gly Arg Ala Ile Pro Leu Ser Tyr Ile Lys Gly Gly		
1380	1385	1390
Arg His Leu Ile Phe Cys His Ser Lys Lys Lys Cys Asp Glu Leu Ala		
1395	1400	1405
Ala Ala Leu Arg Gly Met Gly Leu Asn Ser Val Ala Tyr Tyr Arg Gly		
1410	1415	1420
Leu Asp Val Ser Val Ile Pro Thr Gln Gly Asp Val Val Val Val Ala		
1425	1430	1435 1440
Thr Asp Ala Leu Met Thr Gly Tyr Thr Gly Asp Phe Asp Ser Val Ile		
1445	1450	1455
Asp Cys Asn Val Ala Val Thr Gln Val Val Asp Phe Ser Leu Asp Pro		

1460	1465	1470
Thr Phe Thr Ile Thr Thr Gln Ile Val Pro Gln Asp Ala Val Ser Arg		
1475	1480	1485
Ser Gln Arg Arg Gly Arg Thr Gly Arg Gly Arg Leu Gly Ile Tyr Arg		
1490	1495	1500
Tyr Val Ser Thr Gly Glu Arg Ala Ser Gly Met Phe Asp Ser Val Val		
1505	1510	1515 1520
Leu Cys Glu Cys Tyr Asp Ala Gly Ala Ala Trp Tyr Glu Leu Thr Pro		
1525	1530	1535
Ser Glu Thr Thr Val Arg Leu Arg Ala Tyr Phe Asn Thr Pro Gly Leu		
1540	1545	1550
Pro Val Cys Gln Asp His Leu Glu Phe Trp Glu Ala Val Phe Thr Gly		
1555	1560	1565
Leu Thr His Ile Asp Ala His Phe Leu Ser Gln Thr Lys Gln Ser Gly		
1570	1575	1580
Glu Asn Phe Ala Tyr Leu Thr Ala Tyr Gln Ala Thr Val Cys Ala Arg		
1585	1590	1595 1600
Ala Lys Ala Pro Pro Pro Ser Trp Asp Val Met Trp Lys Cys Leu Thr		
1605	1610	1615
Arg Leu Lys Pro Thr Leu Val Gly Pro Thr Pro Leu Leu Tyr Arg Leu		
1620	1625	1630
Gly Ser Val Thr Asn Glu Val Thr Leu Thr His Pro Val Thr Lys Tyr		
1635	1640	1645
Ile Ala Thr Cys Met Gln Ala Asp Leu Glu Val Met Thr Ser Thr Trp		
1650	1655	1660
Val Leu Ala Gly Gly Val Leu Ala Ala Val Ala Ala Tyr Cys Leu Ala		
1665	1670	1675 1680
Thr Gly Cys Val Cys Ile Ile Gly Arg Leu His Ile Asn Gln Arg Ala		
1685	1690	1695
Val Val Ala Pro Asp Lys Glu Val Leu Tyr Glu Ala Phe Asp Glu Met		
1700	1705	1710
Glu Glu Cys Ala Ser Arg Ala Ala Leu Ile Glu Glu Gly Gln Arg Ile		

1715	1720	1725
Ala Glu Met Leu Lys Ser Lys Ile Gln Gly Leu Leu Gln Gln Ala Ser		
1730	1735	1740
Lys Gln Ala Gln Asp Ile Gln Pro Thr Val Gln Ala Ser Trp Pro Lys		
1745	1750	1755 1760
Val Glu Gln Phe Trp Ala Lys His Met Trp Asn Phe Ile Ser Gly Ile		
1765	1770	1775
Gln Tyr Leu Ala Gly Leu Ser Thr Leu Pro Gly Asn Pro Ala Val Ala		
1780	1785	1790
Ser Met Met Ala Phe Ser Ala Ala Leu Thr Ser Pro Leu Ser Thr Ser		
1795	1800	1805
Thr Thr Ile Leu Leu Asn Ile Leu Gly Gly Trp Leu Ala Ser Gln Ile		
1810	1815	1820
Ala Pro Pro Ala Gly Ala Thr Gly Phe Val Val Ser Gly Leu Val Gly		
1825	1830	1835 1840
Ala Ala Val Gly Ser Ile Gly Leu Gly Lys Val Leu Val Asp Ile Leu		
1845	1850	1855
Ala Gly Tyr Gly Ala Gly Ile Ser Gly Ala Leu Val Ala Phe Lys Ile		
1860	1865	1870
Met Ser Gly Glu Lys Pro Ser Met Glu Asp Val Val Asn Leu Leu Pro		
1875	1880	1885
Gly Ile Leu Ser Pro Gly Ala Leu Val Val Gly Val Ile Cys Ala Ala		
1890	1895	1900
Ile Leu Arg Arg His Val Gly Pro Gly Glu Gly Ala Val Gln Trp Met		
1905	1910	1915 1920
Asn Arg Leu Ile Ala Phe Ala Ser Arg Gly Asn His Val Ala Pro Thr		
1925	1930	1935
His Tyr Val Thr Glu Ser Asp Ala Ser Gln Arg Val Thr Gln Leu Leu		
1940	1945	1950
Gly Ser Leu Thr Ile Thr Ser Leu Leu Arg Arg Leu His Asn Trp Ile		
1955	1960	1965
Thr Glu Asp Cys Pro Ile Pro Cys Gly Gly Ser Trp Leu Arg Asp Val		

1970	1975	1980			
Trp Asp Trp Val Cys Thr Ile Leu Thr Asp Phe Lys Asn Trp Leu Thr					
1985	1990	1995			2000
Ser Lys Leu Phe Pro Lys Met Pro Gly Leu Pro Phe Val Ser Cys Gln					
	2005	2010			2015
Lys Gly Tyr Lys Gly Val Trp Ala Gly Thr Gly Ile Met Thr Thr Arg					
	2020	2025			2030
Cys Pro Cys Gly Ala Asn Ile Ser Gly Asn Val Arg Leu Gly Ser Met					
	2035	2040			2045
Arg Ile Thr Gly Pro Lys Thr Cys Met Asn Ile Trp Gln Gly Thr Phe					
	2050	2055			2060
Pro Ile Asn Cys Tyr Thr Glu Gly Gln Cys Val Pro Lys Pro Ala Pro					
2065	2070	2075			2080
Asn Phe Lys Val Ala Ile Trp Arg Val Ala Ala Ser Glu Tyr Ala Glu					
	2085	2090			2095
Val Thr Gln His Gly Ser Tyr His Tyr Ile Thr Gly Leu Thr Thr Asp					
	2100	2105			2110
Asn Leu Lys Val Pro Cys Gln Leu Pro Ser Pro Glu Phe Phe Ser Trp					
	2115	2120			2125
Val Asp Gly Val Gln Ile His Arg Phe Ala Pro Thr Pro Lys Pro Phe					
	2130	2135			2140
Phe Arg Asp Glu Val Ser Phe Cys Val Gly Leu Asn Ser Phe Val Val					
2145	2150	2155			2160
Gly Ser Gln Leu Pro Cys Asp Pro Glu Pro Asp Thr Asp Val Leu Met					
	2165	2170			2175
Ser Met Leu Thr Asp Pro Ser His Ile Thr Ala Glu Thr Ala Ala Arg					
	2180	2185			2190
Arg Leu Ala Arg Gly Ser Pro Pro Ser Glu Ala Ser Ser Ser Ala Ser					
	2195	2200			2205
Gln Leu Ser Ala Pro Ser Leu Arg Ala Thr Cys Thr Thr His Gly Lys					
	2210	2215			2220
Ala Tyr Asp Val Asp Met Val Asp Ala Asn Leu Phe Met Gly Gly Asp					

2225	2230	2235	2240
Val Thr Arg Ile Glu Ser Gly Ser Lys Val Val Val Leu Asp Ser Leu			
2245	2250	2255	
Asp Pro Met Val Glu Glu Arg Ser Asp Leu Glu Pro Ser Ile Pro Ser			
2260	2265	2270	
Glu Tyr Met Leu Pro Lys Lys Arg Phe Pro Pro Ala Leu Pro Ala Trp			
2275	2280	2285	
Ala Arg Pro Asp Tyr Asn Pro Pro Leu Val Glu Ser Trp Lys Arg Pro			
2290	2295	2300	
Asp Tyr Gln Pro Ala Thr Val Ala Gly Cys Ala Leu Pro Pro Pro Arg			
2305	2310	2315	2320
Lys Thr Pro Thr Pro Pro Pro Arg Arg Arg Arg Thr Val Gly Leu Ser			
2325	2330	2335	
Glu Asp Ser Ile Gly Asp Ala Leu Gln Gln Leu Ala Ile Lys Ser Phe			
2340	2345	2350	
Gly Gln Pro Pro Pro Ser Gly Asp Ser Gly Leu Ser Thr Gly Ala Gly			
2355	2360	2365	
Ala Ala Asp Ser Gly Ser Gln Thr Pro Pro Asp Glu Leu Ala Leu Ser			
2370	2375	2380	
Glu Thr Gly Ser Ile Ser Ser Met Pro Pro Leu Glu Gly Glu Leu Gly			
2385	2390	2395	2400
Asp Pro Asp Leu Glu Pro Glu Gln Val Glu Pro Gln Pro Pro Pro Gln			
2405	2410	2415	
Gly Gly Val Ala Ala Pro Gly Ser Asp Ser Gly Ser Trp Ser Thr Cys			
2420	2425	2430	
Ser Glu Glu Asp Asp Ser Val Val Cys Cys Ser Met Ser Tyr Ser Trp			
2435	2440	2445	
Thr Gly Ala Leu Ile Thr Pro Cys Ser Pro Glu Glu Glu Lys Leu Pro			
2450	2455	2460	
Ile Asn Pro Leu Ser Asn Ser Leu Leu Arg Tyr His Asn Lys Val Tyr			
2465	2470	2475	2480
Cys Thr Thr Thr Lys Ser Ala Ser Leu Arg Ala Lys Lys Val Thr Phe			

2485	2490	2495
Asp Arg Met Gln Val Leu Asp Ser Tyr Tyr Asp Ser Val Leu Lys Asp		
2500	2505	2510
Ile Lys Leu Ala Ala Ser Lys Val Thr Ala Arg Leu Leu Thr Met Glu		
2515	2520	2525
Glu Ala Cys Gln Leu Thr Pro Pro His Ser Ala Arg Ser Lys Tyr Gly		
2530	2535	2540
Phe Gly Ala Lys Glu Val Arg Ser Leu Ser Gly Arg Ala Val Asn His		
2545	2550	2555 2560
Ile Lys Ser Val Trp Lys Asp Leu Leu Glu Asp Ser Glu Thr Pro Ile		
2565	2570	2575
Pro Thr Thr Ile Met Ala Lys Asn Glu Val Phe Cys Val Asp Pro Thr		
2580	2585	2590
Lys Gly Gly Lys Lys Ala Ala Arg Leu Ile Val Tyr Pro Asp Leu Gly		
2595	2600	2605
Val Arg Val Cys Glu Lys Met Ala Leu Tyr Asp Ile Thr Gln Lys Leu		
2610	2615	2620
Pro Gln Ala Val Met Gly Ala Ser Tyr Gly Phe Gln Tyr Ser Pro Ala		
2625	2630	2635 2640
Gln Arg Val Glu Phe Leu Leu Lys Ala Trp Ala Glu Lys Lys Asp Pro		
2645	2650	2655
Met Gly Phe Ser Tyr Asp Thr Arg Cys Phe Asp Ser Thr Val Thr Glu		
2660	2665	2670
Arg Asp Ile Arg Thr Glu Glu Ser Ile Tyr Arg Ala Cys Ser Leu Pro		
2675	2680	2685
Glu Glu Ala His Thr Ala Ile His Ser Leu Thr Glu Arg Leu Tyr Val		
2690	2695	2700
Gly Gly Pro Met Phe Asn Ser Lys Gly Gln Thr Cys Gly Tyr Arg Arg		
2705	2710	2715 2720
Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Met Gly Asn Thr Ile Thr		
2725	2730	2735
Cys Tyr Val Lys Ala Leu Ala Ala Cys Lys Ala Ala Gly Ile Ile Ala		

2740	2745	2750
Pro Thr Met Leu Val Cys Gly Asp Asp Leu Val Val Ile Ser Glu Ser		
2755	2760	2765
Gln Gly Thr Glu Glu Asp Glu Arg Asn Leu Arg Ala Phe Thr Glu Ala		
2770	2775	2780
Met Thr Arg Tyr Ser Ala Pro Pro Gly Asp Pro Pro Arg Pro Glu Tyr		
2785	2790	2795 2800
Asp Leu Glu Leu Ile Thr Ser Cys Ser Ser Asn Val Ser Val Ala Leu		
2805	2810	2815
Gly Pro Gln Gly Arg Arg Arg Tyr Tyr Leu Thr Arg Asp Pro Thr Thr		
2820	2825	2830
Pro Ile Ala Arg Ala Ala Trp Glu Thr Val Arg His Ser Pro Val Asn		
2835	2840	2845
Ser Trp Leu Gly Asn Ile Ile Gln Tyr Ala Pro Thr Ile Trp Ala Arg		
2850	2855	2860
Met Val Leu Met Thr His Phe Phe Ser Ile Leu Met Ala Gln Asp Thr		
2865	2870	2875 2880
Leu Asp Gln Asn Leu Asn Phe Glu Met Tyr Gly Ala Val Tyr Ser Val		
2885	2890	2895
Ser Pro Leu Asp Leu Pro Ala Ile Ile Glu Arg Leu His Gly Leu Asp		
2900	2905	2910
Ala Phe Ser Leu His Thr Tyr Thr Pro His Glu Leu Thr Arg Val Ala		
2915	2920	2925
Ser Ala Leu Arg Lys Leu Gly Ala Pro Pro Leu Arg Ala Trp Lys Ser		
2930	2935	2940
Arg Ala Arg Ala Val Arg Ala Ser Leu Ile Ser Arg Gly Gly Arg Ala		
2945	2950	2955 2960
Ala Val Cys Gly Arg Tyr Leu Phe Asn Trp Ala Val Lys Thr Lys Leu		
2965	2970	2975
Lys Leu Thr Pro Leu Pro Glu Ala Arg Leu Leu Asp Leu Ser Ser Trp		
2980	2985	2990
Phe Thr Val Gly Ala Gly Gly Gly Asp Ile Tyr His Ser Val Ser Arg		

2995

3000

3005

Ala Arg Pro Arg Leu Leu Leu Phe Gly Leu Leu Leu Leu Phe Val Gly
3010 3015 3020

Val Gly Leu Phe Leu Leu Pro Ala Arg
3025 3030